# Ion Chart & Activity Series

## Oxidation Numbers of Common Monatomic Ions

| +1 Monatomic Cations | | +2 Monatomic Cations | | | |
|---|---|---|---|---|---|
| ALKALI METALS | $All^{+}$ | ALKALINE METALS | $All^{+2}$ | manganese (II) | $Mn^{+2}$ |
| copper (I) | $Cu^{+}$ | cadmium | $Cd^{+2}$ | mercury (II) | $Hg^{+2}$ |
| hydrogen | $H^{+}$ | copper (II) | $Cu^{+2}$ | nickel (II) | $Ni^{+2}$ |
| silver | $Ag^{+}$ | iron (II) | $Fe^{+2}$ | tin (II) | $Sn^{+2}$ |
| thallium (I) | $Tl^{+}$ | lead (II) | $Pb^{+2}$ | zinc | $Zn^{+2}$ |

| +3 Monatomic Cations | | +4 Monatomic Cations | | +5 Monatomic Cations | |
|---|---|---|---|---|---|
| aluminum | $Al^{+3}$ | carbon | $C^{+4}$ | Antimony | $Sb^{+5}$ |
| bismuth (III) | $Bi^{+3}$ | germanium (IV) | $Ge^{+4}$ | Arsenic | $As^{+5}$ |
| cerium (III) | $Ce^{+3}$ | lead (IV) | $Pb^{+4}$ | Bismuth (V) | $Bi^{+5}$ |
| chromium (III) | $Cr^{+3}$ | silicon (IV) | $Si^{+4}$ | Vanadium (V) | $V^{+5}$ |
| gallium (III) | $Ga^{+3}$ | tin (IV) | $Sn^{+4}$ | | |

| -1 Monatiomic Anions | | -2 Monatomic Anions | | | |
|---|---|---|---|---|---|
| HALOGENS | $All^{-}$ | oxide | $O^{-2}$ | sulfide | $S^{-2}$ |
| Hydride | $H^{-}$ | selenide | $Se^{-2}$ | telluride | $Te^{-2}$ |

| -3 Monatomic Anions | | -4 Monatomic Anions | | -5 Monatomic Anions | |
|---|---|---|---|---|---|
| arsenide | $As^{-3}$ | carbide | $C^{-4}$ | Boride | $B^{-5}$ |
| nitride | $N^{-3}$ | | | | |
| phosphide | $P^{-3}$ | | | | |

### Activity Series (Metals)

Lithium
Rubidium
Potassium
Calcium
Sodium
Magnesium
Aluminum
Manganese
Zinc
Iron
Nickel
Tin
Lead
Hydrogen
Copper
Silver
Platinum
Gold

## Oxidation Numbers of Common Polyatomic Ions

| +1 Polyatomic Cations | |
|---|---|
| ammonium | $NH_4^{+}$ |

| -1 Polyatomic Anions | |
|---|---|
| acetate | $C_2H_3O_2^{-}$ |
| bicarbonate | $HCO_3^{-}$ |
| AKA = hydrogen carbonate | |
| bromate | $BrO_3^{-}$ |
| bromite | $BrO_2^{-}$ |
| chlorate | $ClO_3^{-}$ |
| chlorite | $ClO_2^{-}$ |
| cyanide | $CN^{-}$ |
| dihydrogen phosphate | $H_2PO_4^{-}$ |
| hydroxide | $OH^{-}$ |
| periodate | $IO_4^{-}$ |
| iodate | $IO_3^{-}$ |
| iodite | $IO_2^{-}$ |
| hypoiodite | $IO^{-}$ |
| permanganate | $MnO_4^{-}$ |
| manganate | $MnO_3^{-}$ |
| nitrate | $NO_3^{-}$ |
| nitrite | $NO_2^{-}$ |

| -2 Polyatomic Anions | |
|---|---|
| carbonate | $CO_3^{-2}$ |
| carbonite | $CO_2^{-2}$ |
| chromate | $CrO_4^{-2}$ |
| dichromate | $Cr_2O_7^{-2}$ |
| hexafluorosilicate | $SiF_6^{-2}$ |
| hydrogen phosphate | $HPO_4^{-2}$ |
| oxalate | $C_2O_4^{-2}$ |
| peroxide | $O_2^{-2}$ |
| selenate | $SeO_4^{-2}$ |
| silicate | $SiO_3^{-2}$ |
| sulfate | $SO_4^{-2}$ |
| sulfite | $SO_3^{-2}$ |
| thiosulfate | $S_2O_3^{-2}$ |
| tungstate | $WO_4^{-2}$ |

| -3 Polyatiomic Anions | |
|---|---|
| arsenate | $AsO_3^{-3}$ |
| citrate | $C_6H_5O_7^{-3}$ |
| hexacyanoferrate(III) | $Fe(CN)_6^{-3}$ |
| phosphate | $PO_4^{-3}$ |
| phosphite | $PO_3^{-3}$ |

| -4 Polyatomic Anions | |
|---|---|
| hexacyanoferrate(II) | $Fe(CN)_6^{-4}$ |
| pyrophosphate | $P_4O_7^{-4}$ |

### Activity Series (Halogens)

Fluorine
Chlorine
Bromine
Iodine